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RoHS

Motherboard

User's Manual

MI-H67/Z68 Version 002

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Gratitude

Thank you for choosing Giada motherboard.

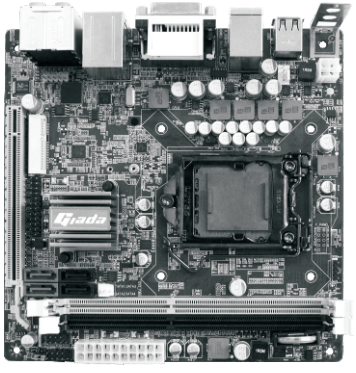
Giada MI-H67 is an Intel® H67 Express chipset-based desktop board in Mini-ITX form factor. It supports the 2nd generation Intel® Core™ i5 processor and other Intel® processors in the LGA1155 package. The Intel Z68 Express Chipset is the first product to enable performance tuning with access to the built-in visual features of 2nd generation Intel® Core™ processor family.MI-Z68 also offers premium features such as two SATA 6 Gb/s ports and two USB 3.0 ports with 5Gb/s link speed. The Mini-ITX form factor provides maximum design flexibility for system designs ranging from all-in-one to portable systems.

Giada MI-Z68 is an Intel® Z68 Express chipset-based desktop board in Mini-ITX form factor. It supports the 2nd generation Intel® Core™ i5 processor and other Intel® processors in the LGA1155 package. Powered by the 2nd generation Intel® Core™ processors, MI-H67 delivers a superb visual performance for sharper images, richer color, and life-like audio and video. MI-H67 also offers premium features such as two SATA 6 Gb/s ports and two USB 3.0 ports with 5Gb/s link speed. The Mini-ITX form factor provides maximum design flexibility for system designs ranging from all-in-one to portable systems.

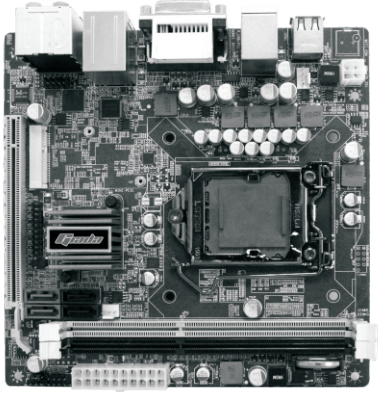
They all supports INTEL Hyper-Threading technology, 6.4GT/s and 4.8GT/s for QPI, and DDR3 1333/1066MHz memory standards. With on-board six-channel HD-AUDIO sound card and gigabit LAN. Support HDMI HD display output.
Any question about the product, please send e-mail to our support center.
Headquarter:
Sales@giadatech.com
support@giadatech.com
USA office: support@giadapc.com

I. About the product

1. Picture of the motherboard



MI-Z68



MI-H67

NOTE: This product photo is for your reference only, Product appearance depends on goods.

2. Features

2.1 Processor

- Supports INTEL LGA1155 processor;
- Support 2nd generation Intel® Core™ i3,i5,i7 and Intel® Pentium processor.

2.2 Memory

- Supports 240-Pin DDR3 1333/1066MHz memories * 2;
- 8GB at maximum;
- Supports dual-channel mode.

2.3 BIOS

- Supports PNP, APM and ATAPI;
- Supports ACPI and DMI;
- Automatic detection and supporting hard disk whose LBA mode is over 160G;
- End-users can easily upgrade the motherboard with BIOS.

2.4 Power management

- Support APM and ACPI;
- Compatible with energy star “Green PC”.

2.5 Interfaces for peripherals

- One PS/2 keyboard connector;
- One DVI port;
- One HDMI port;
- One DVI interface;
- One VGA interface;
- One SPDIF co-axial audio source interface;
- Two USB3.0 high-speed transmission port (max. 4.8Gb/s) which compatible with USB2.0 and USB1.1;
- 8.Eight USB2.0 transmission ports (max. 480Mb/s) which compatible with USB1.1;
- One Gigabit network interface;
- On-board eight-channel HD-AUDIO audio adapter;

2.6 Expansion slot

- One PCI-e 16X;
- One Mini PCI-e 1X;

II. Hardware installation

Warning

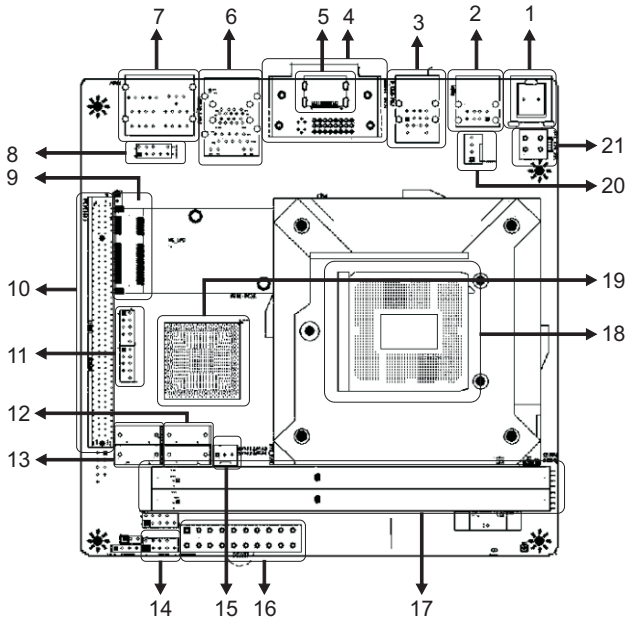
The motherboard consists of a great number of ICs and other components. These ICs might be damaged by the static charge. Therefore, the user must make the following preparations before installation:

- Turn off the power of the computer. It is preferable the power cord be unplugged.
- Take care not to contact the metal wires and theirs joints on the motherboard when handling it.
- It is preferable that the operator wear the anti-static wrist strap when handling the IC components.
- Before the ICs are installed, the components of the motherboard should be placed on the anti-static mat or bag.
- When you remove the plug on the ATX power supply of the motherboard, make sure the switch of the power supply is in OFF state.

Installing the motherboard onto the computer case:

For most of the computer cases, the multiple fixing holes left on their bottoms can be used for securing the motherboard and preventing short circuit. During your operation, take care not to allow the screws to contact any circuit or part on PCB. When circuits on the surface of the motherboard get close to the fixing holes, you can use the plastic sheet to separate the screws from the board surface so as to avoid damage or failure of the motherboard.

1. Layout of motherboard



1. WiFi aperture
2. 2 x USB2.0 port
3. PS/2 Keyboard port
   + 2 x USB2.0 port
4. DVI port(top)
5. HDMI port(bottom)
6. RJ45 port(top)
   + 2 x USB3.0(bottom)
7. 5jack Audio port
   (includes 1*optical S/PDIF-out)
8. Front Audio header
9. Mini PCIe 1X
10. PCIe 16X
11. 2 x Front USB2.0 header
12. 2 x SATA2 port, black
13. 2 x SATA2 port / SATA3 port
14. Front Panel header
15. SYS_FAN
16. ATX Power 20PIN
17. 2 x DDR3 UDIMM 240PIN (blue+black)
18. Intel LGA1155 CPU Socket
19. Intel H67/Z68 Chipset
20. CPU_FAN
21. ATX Power 4PIN

2. Installing Hardware

2.1. Installing CPU

- Find LGA1155 CPU Socket on the mother board, as shown in Fig 2.1.1

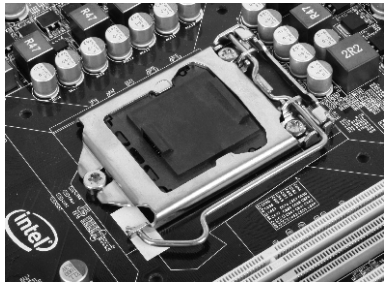


Fig 2.1.1

- Pull up the lever at the side of socket to about 160 degrees angle, and then pull up the CPU metal shell to about 110 degrees with the socket (ie fully open), as shown in Fig 2.1.2

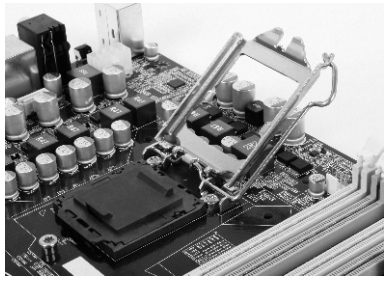


Fig 2.1.2

- Uncover the contact pin protect cover, as shown in Fig 2.1.3

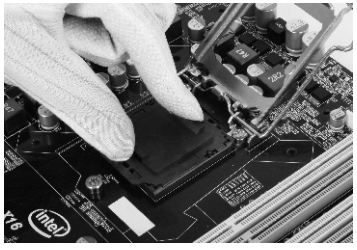


Fig 2.1.3

- Input the CPU carefully, make sure the contact pins in socket and contact lands on CPU are matched. Close the cover, as shown in Fig 2.1.4

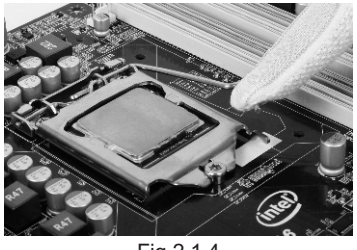


Fig 2.1.4

- Then you need to lock down the socket lever while gently press the metal shell with your fingers. When lock process has been complete, you will heard a crisp sound.

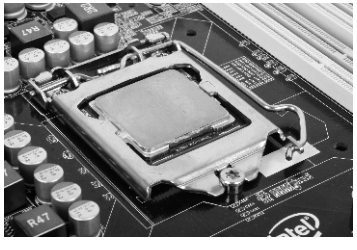


Fig 2.1.5

2.2. Installing CPU FAN

Only with the desired cooling effect, CPU can play the ultimate performance. Intel LGA1155 CPU has been specially designed cooling fan to keep the best cooling effect, as shown in Figure 2.7, is one of the samples.

Fig 2.2.1

NOTE: If you've bought a bulk Intel LGA1155 processor, be sure to use the FAN which certified by Intel.

1. Put the cooling fan at the top of the processor, and align the fours fan holders to the holes on motherboard.
2. Press in the holders to motherboard in proper order, to ensure fan is close contact with the CPU.

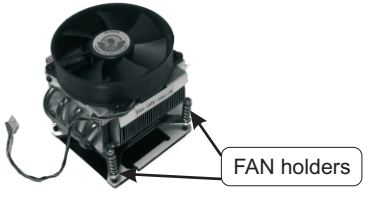


Fig 2.2.2

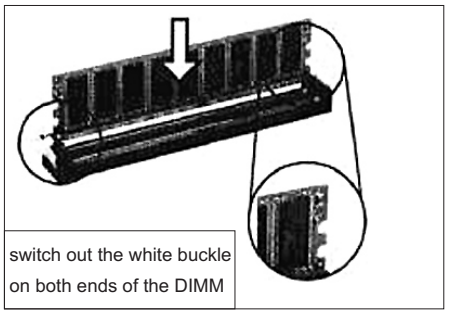
3. Finally, plug the CPU fan power cable into the socket on the motherboard.

2.3. Installing Memory

Please install the memory in accordance with the following procedures:

1.Remove the white buckle at the two ends of the interface slot for the memory;

2.Align the golden finger of the memory to the groove of the interface slot and pay attention the concave hole of golden finger should be aligned to the convex point of the slot.



3. Finally, insert the memory into the interface slot gently. If no error occurs at the moment, insert the card forward in the slot till the white buckle is automatically engaged in the concave hole at the two sides of the memory.

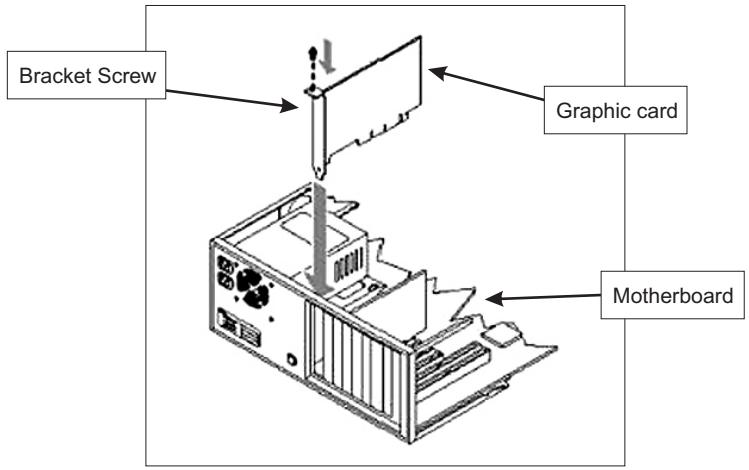
Note

In order to avoid damages to the motherboard or the components, the user must make sure the power supply to the computer is turned off before the memory or other component is installed or removed. As the groove is set at the golden finger of the DDR DIMM, the memory can only be inserted into the slot with one direction. During installation, the user only needs to align the golden finger and the dual-channel groove of the interface slot and insert it gently. To avoid damage, never apply excessive force in that process.

3. Install expansion slot card

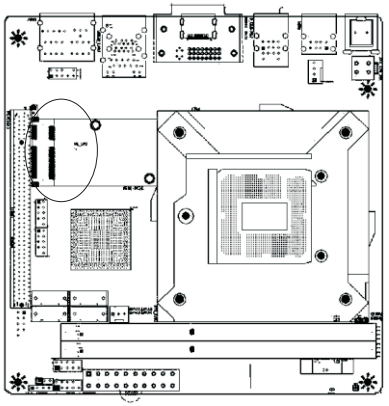
3. 1 Install graphic card

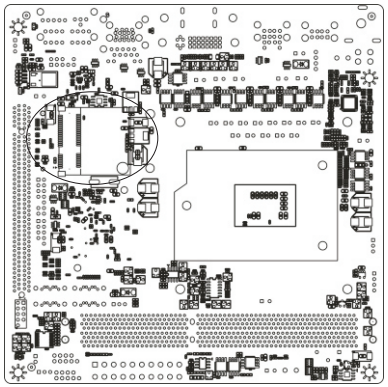
This motherboard provides one interface slot for PCIE 16x AGP. When you install the PCIE graphic card, you should note that groove of the golden finger must be exactly engaged into the interface slot. In that process, it is preferable that you are in grounded state, and you should carefully take out the graphic card from the anti-static bag. Then align the graphic card to the PCIE slot and insert it. After that, tighten the screw on the metal baffle.



3.2 Installing Mini-PCIE extended devices

At the rear panel of MI-H67/Z68 is a Mini-PCIE extended slot, to which the user can connected WIFI module and Bluetooth module etc.





4. Motherboard jumper setting

Note:

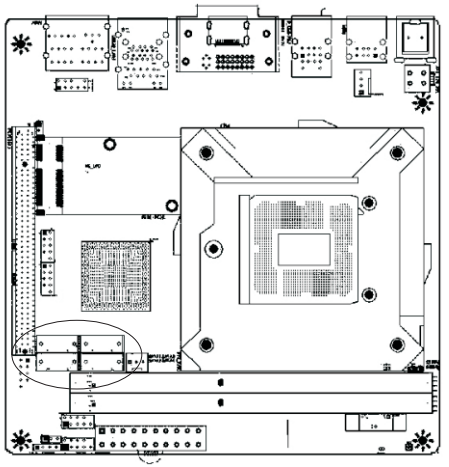
The user should notice that all sockets are marked with PIN1. The mark "#" indicates the ex-factory default values.

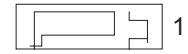
4.1. SATA1/SATA2/SATA3/SATA4 (Serial ATA flat-cable sockets)

2nd generation Serial ATA sockets offer a transmission speed of 300MB/s, 3rd generation Serial ATA sockets can reach 600MB/s.

MI-H67: 2 x SATA2 port, black / 2 x SATA3 port, blue

MI-Z68: 2 x SATA2 port, black / 2 x SATA3 port, blue

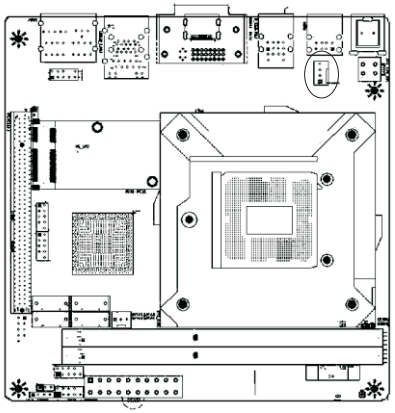




PIN	Definition
1	GND
2	TXP
3	TXN
4	GND
5	RXN
6	RXP
7	GND

4.2. CPU_FAN1 (CPU FAN socket)

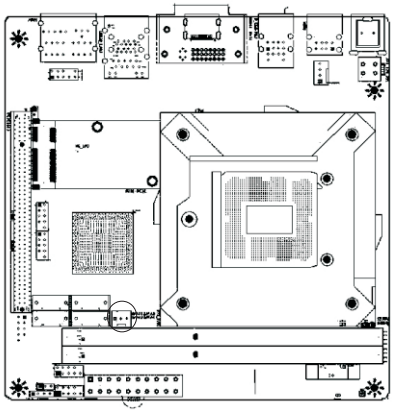
This receptacle can be used for connecting CPU fan. Its pins are defined below. The user shall make sure the fan is conforming.



PIN	Definition
1	GND
2	12V
3	SIGNAL
4	PMW

4.3. SYS_FAN (System FAN socket)

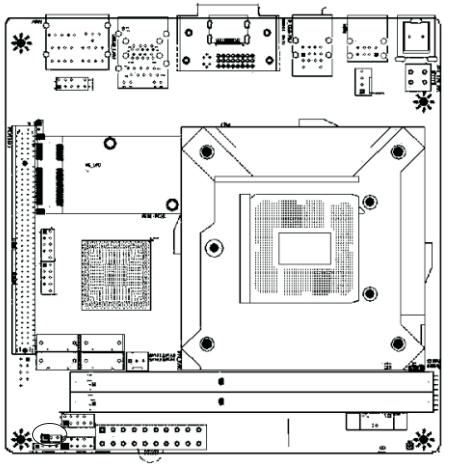
This receptacle can be used for connecting system fan. Its pins are defined below. The user shall make sure the fan is conforming.



Pin#	Definition
1	GND
2	12V
3	SIGNAL

4.4. CLR_CMOS(CMOS pin)

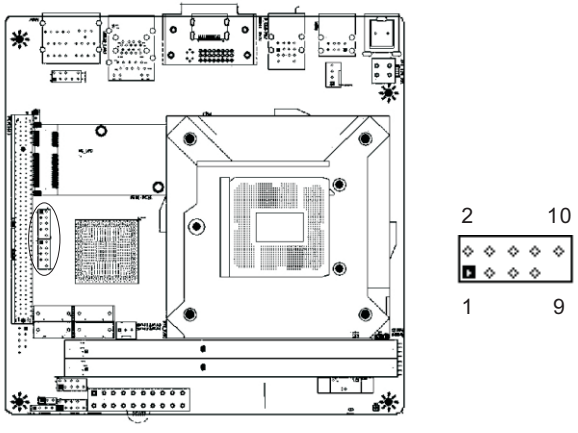
The correct time, system hardware and other information are saved in the CMOS memory of the motherboard. The interruption the computer's power won't cause the loss of this information, for the CMOS is powered by the battery on the motherboard. The port is defined as follows:



PIN	Definition
1-2#	Normal
2-3	CLR_CMOS

4.5. F_USB1/ F_USB2 (frond-end USB pin)

In case the USB ports on the rear panel of the machine case are not enough, the user can use the two sets of extension USB pins provided by this motherboard. These ports support USB 2.0 devices. The definitions of the ports are described below:

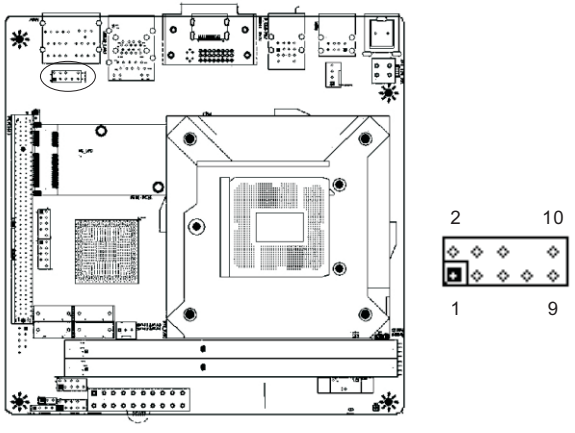


PIN	Definition	PIN	Definition
1	5V	2	5V
3	USB D0-	4	USB D1-
5	USB D0+	6	USB D1+
7	GND	8	GND
9	NULL	10	NULL

4.6. F_ AUDIO(Pins for front-end audio adapter)

These audio adapter ports allow you to connect to the wire harness of the audio adapter. After connection, you can easily control the audio output/microphone through the front panel of the host.

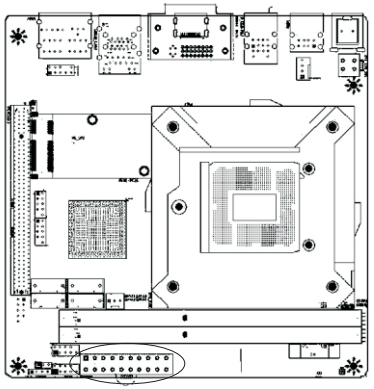
The definitions of the ports are described below:

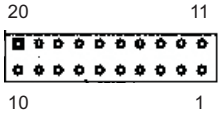


PIN	Definition	PIN	Definition
1	MIC_L	2	GND
3	MIC_R	4	PRESENCE# (Dongle present)
5	OUT_R	6	MIC_SENSE_RETURN
7	SENSE_SEND (Jack detection)	8	NULL
9	OUT_L	10	OUT_SENSE_RETURN

4.7. ATX 20P (Power receptacle)

This socket is used for connecting the 20-pin outlet of the power supply. The definitions of the pins are described below (when power supply with 20-pin outlet is used, please make sure the numbers are matched correctly):

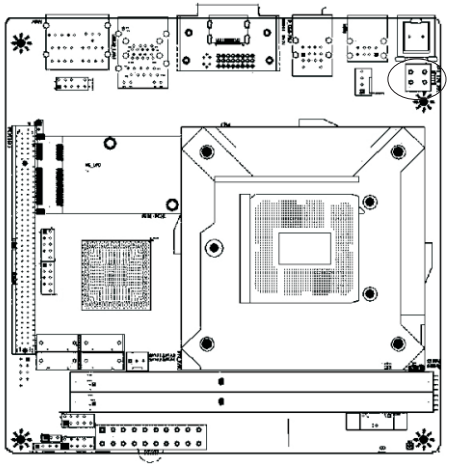


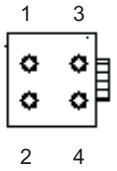


PIN	Definition	PIN	Definition
1	3.3V	11	3.3V
2	3.3V	12	-12V
3	GND	13	GND
4	5V	14	PS-ON
5	GND	15	GND
6	5V	16	GND
7	GND	17	GND
8	PG	18	-5V
9	5VSB	19	5V
10	12V	20	5V

4.8. ATX 12V (12V Power receptacle)

This board has special 12V power receptacle for CPU. For better and more stable processor power supply, we suggest keeping the connection on this socket. The definitions of the pins are described below:

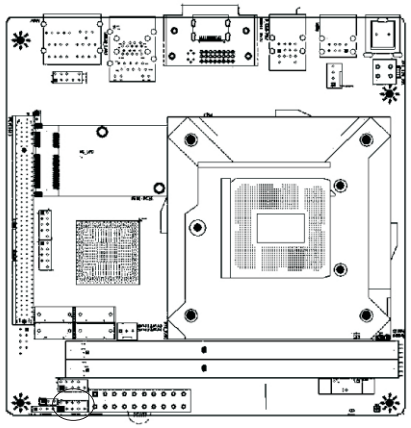


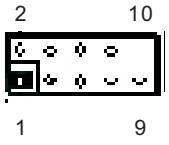


PIN	Definition
1	GND
2	GND
3	12V
4	12V

4.9. F_ PANEL (Front-end control panel)

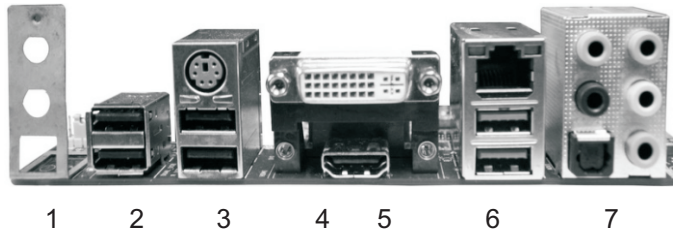
This socket is used to connect the flat cables on the front-end panel.





PIN	Definition	PIN	Definition
1	HDLED+	2	PLED+(VCC)
3	GND	4	GND
5	RST+	6	NULL
7	GND	8	PWBT
9	NULL	10	

5. Rear panel interface



1. Antenna Holes
2. USB2.0 port
3. PS/2 keyboard port + USB2.0 port
4. DVI port
5. HDMI port
6. RJ45 port + USB3.0 port
7. Audio interface (Including S/PDIF)

III. BIOS Setting

Note

The descriptions relating to BIOS in this Manual can only be used for reference as the BIOS version of the motherboard is upgraded continuously. Giada provides no guarantee that the contents in this Manual be consistent with the information you acquire.

BIOS is a basic I/O control program saved in the Flash Memory. Bridging the motherboard and the operating system, BIOS is used for managing the setup of the related parameters between them. When the computer is activated, the system is first controlled by the BIOS program. First, a self-detection called POST is performed to check all hard devices and confirm the parameters of the synchronous hardware. Once all detections are completed, BIOS will hand over the controlling to the operating system (OS). As BIOS serves as the only channel that connects the hardware and software, whether your computer can run stably and work in optimized state will hinge on how to properly set the parameters in BIOS. Therefore, the correct setup of BIOS plays a key role in stably running the system and optimizing its performance.

The CMOS Setup will save the set parameters in the built-in CMOS SRAM on the motherboard. When the power is shut off, the lithium battery on the motherboard will provide continuously power for CMOS SRAM. The BIOS setup program will allow you to configure the following items:

1. HD drive, floppy drive and peripheral devices;
2. Video display type and display items;
3 Password protection;
4. Power management characteristics.

A.State of BIOS Setup

When the computer is started up, BIOS will run the self-detection (Post) program. This program includes series of diagnosis fixed in BIOS. When this program is executed, the following information will appear if any error is found:

Press F1 to Run Setup

Press F 2 to Load default values and continue

To enter BIOS, you can press F1; to load the default values and enter the system, you can press F2. After the self-detection process is completed, you can press DEL to enter the BIOS interface if no error is found. If the indicative information disappears before you can act, you can shut off the computer and turn on it again, or you can press the key RESET on the machine case. To restart your computer, you can also simultaneously press <Ctrl>+<Alt>+<Delete>.

B. Function Keys definitions

Key	Function
↑ (Up key)	Move to the previous item
↓ (Down key)	Move to the next item
← (Left key)	Move to the left item
→ (Right key)	Move to the right item
ESC	Exit the current interface
Page Up	Change the setup state, or add the values
Page Down	Change the setup state, or deduct the values
F1	Display the information of the current setup
F7	Load the set values of previous time
F8	Load the safest values
F9	Load the optimized values
F10	Save the settings and exit the CMOS SETUP

C. Auxiliary information

Main interface

When the system enters the main interface of Setup, the major selected contents will be displayed at the lower part of the interface with the change of the options.

Set interface

When you set the value for each column, you can view the preset value of the column and the values that can be set if you press F1, for example, the BIOS default values or CMOS Setup values. To exit the interface for auxiliary information, press [ESC].

1. Main menu

When the system enters the CMOS Setup menu, you can see the main menu on the upper part of the screen, as shown in Figure 3.1. In this main menu, you can use the left and right direction keys to select the setup items. Once the item is selected, the lower part of the computer screen will show the details of setting.

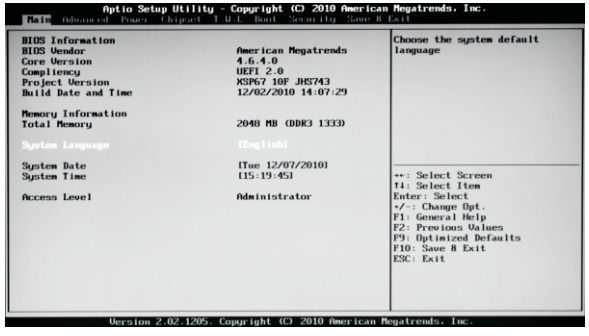

Aptio Setup Utility – Copyright (C) 2010 American Megatrends, Inc.
Main Advanced Power Chipset T.W.L Boot Security Save & Exit
BIOS Information
BIOS Vendor American Megatrends
Core Version 4.6.4.0
Compliency UEFI 2.0
Project Version X58P67 10F JHS743
Build Date and Time 12/02/2010 14:07:29
Memory Information
Total Memory 2048 MB (DDR3 1333)
System Language [English]
System Date [Tue 12/07/2010]
System Time [15:19:45]
Access Level Administrator
Choose the system default language
↔: Select Screen
↑↓: Select Item
Enter: Select
+/-: Change Opt.
F1: General Help
F2: Previous Values
F9: Optimized Defaults
F10: Save & Exit
ESC: Exit
Version 2.02.1205. Copyright (C) 2010 American Megatrends, Inc.

Fig 3.1

(The options above and their contents may be different from your actual options, so they are used for reference only).

- **Main (standard CMOS setup)**
  This item is used for setting the date, time, system language.

- **Advanced (advanced BIOS setup)**
  This item is used for setting the advanced functions provided by BIOS, such as specifications of PCIe facilities, CPU, HDD, etc.

- **Power (power management)**
  This item is used for setting ACPI advanced configuration and power management, such as sleep mode(S1,S3), wake up method(By USB, PS/2).

- **Chipset (setting the performance of the chips)**

- **T.W.L (System performance configuration)**

- **Boot (startup configuration characteristics)**

- **Security (setting the administrator/user password)**

- **Save&Exit (option of exit)**
  This item includes load optimal defaults/load failsafe defaults value/discard changes/ discard changes and exit.

2. Main (Standard CMOS setting)

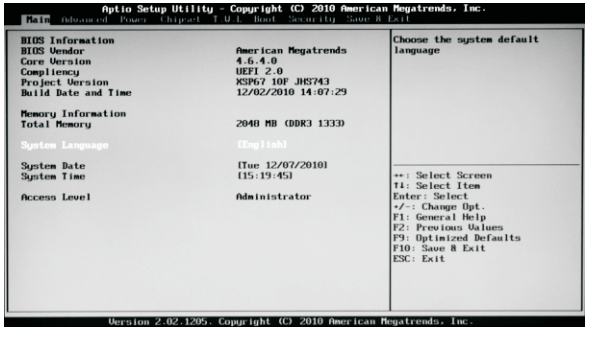

Aptio Setup Utility – Copyright (C) 2010 American Megatrends, Inc.
Main Advanced Power Chipset T.W.L Boot Security Save & Exit
BIOS Information
BIOS Vendor American Megatrends
Core Version 4.6.4.0
Compliency UEFI 2.0
Project Version X58P67 10F JHS743
Build Date and Time 12/02/2010 14:07:29
Memory Information
Total Memory 2048 MB (DDR3 1333)
System Language [English]
System Date [Tue 12/07/2010]
System Time [15:19:45]
Access Level Administrator
Choose the system default language
↔: Select Screen
↑↓: Select Item
Enter: Select
+/-: Change Opt.
F1: General Help
F2: Previous Values
F9: Optimized Defaults
F10: Save & Exit
ESC: Exit
Version 2.02.1205. Copyright (C) 2010 American Megatrends, Inc.

Fig 3.2

- **System Language**

- **System time (hh:mm:ss)**
  Use this item to set the time for the computer, with the format as “hour/minute/second”.

- **System date (mm:dd:yy)**
  Use this item to set the date for the computer, with the format as “week, month/day/year”.

3. Advanced (Advanced BIOS setup)

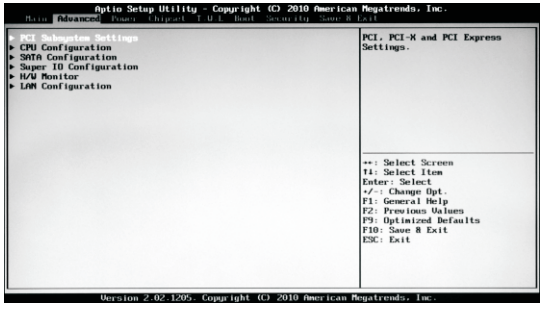


Fig 3.3

3.1 CPU Configuration

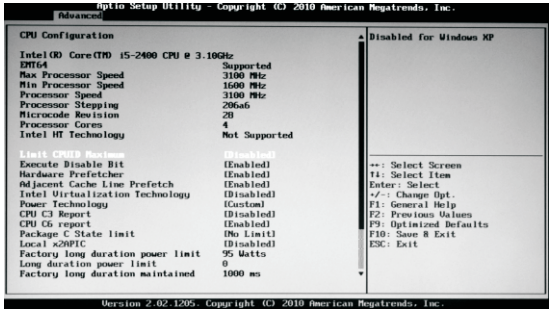

Aptio Setup Utility – Copyright (C) 2010 American Megatrends, Inc.
Advanced
CPU Configuration
Intel(R) Core(TM) i5-2400 CPU @ 3.10GHz
EM64T Supported
Max Processor Speed 3100 MHz
Min Processor Speed 1600 MHz
Processor Speed 3100 MHz
Processor Stepping 206a6
Microcode Revision 20
Processor Cores 4
Intel HT Technology Not Supported
Limit CPUID Maximum [Disabled]
Execute Disable Bit [Enabled]
Hardware Prefetcher [Enabled]
Adjacent Cache Line Prefetch [Enabled]
Intel Virtualization Technology [Disabled]
Power Technology [Custom]
CPU C3 Report [Disabled]
CPU C6 report [Enabled]
Package C State limit [No Limit]
Local x2APIC [Disabled]
Factory long duration power limit 95 Watts
Long duration power limit 0
Factory long duration maintained 1000 ms
Disabled for Windows XP
→←: Select Screen
↑↓: Select Item
Enter: Select
+/-: Change Opt.
F1: General Help
F2: Previous Values
F9: Optimized Defaults
F10: Save & Exit
ESC: Exit
Version 2.02.1205. Copyright (C) 2010 American Megatrends, Inc.

Fig 3.4

- **Limit CPUID Maximum**
  This item is for Prescott CPU only, or some OS that can't support this function.

- **Hardware Prefetcher**
  Intel hardware prefetch function: [Disabled][Enabled]

- **Adjacent Cache Line Prefech**
  High speed adjacent cache prefetch function: [Disabled][Enabled]

- **Intel Virtualization Technology**

- **CPU C3 Report**

- **CPU C6 Report**

- **Package C State Limit**
  Energy conservation mode setting.

- **Local x2APIC**

- **Factory long duration power limit**
  This item shows CPU's power consumption, and can adjust CPU frequency multiplication.

3.2 SATA Configuration

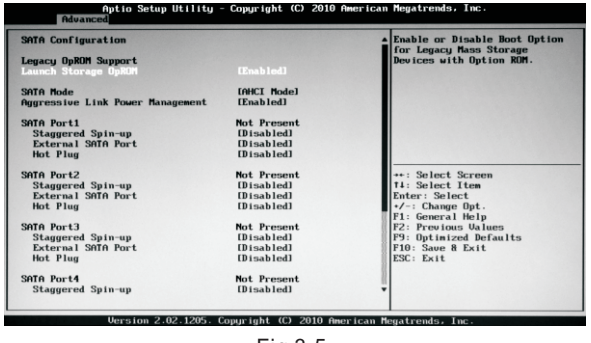


Fig 3.5

- **Launch Storage OpROM**

- **SATA Mode**
  This item is use to choose SATA support type.
  For MI-H61, it's [IDE]
  For MI-H67, it has [IDE] or [AHCI].
  According to Intel chipset's limitation, Windows XP does not support AHCI mode, AHCI mode could only be use in built-in operating system like Windows Vista or Windows 7.

- **Aggressive Link Power Management**

  Options:[Disabled][Enabled]

  You could do further SATA configuration via enable this item.

3.3 IO Chipset Configuration

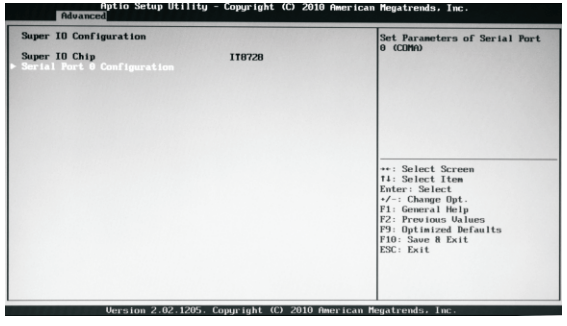


Fig 3.6

- **Super IC chip**

  This item is use to show all the I/Os of the MB.

- **Serial Port 0 configuration**

3.4 PC Health

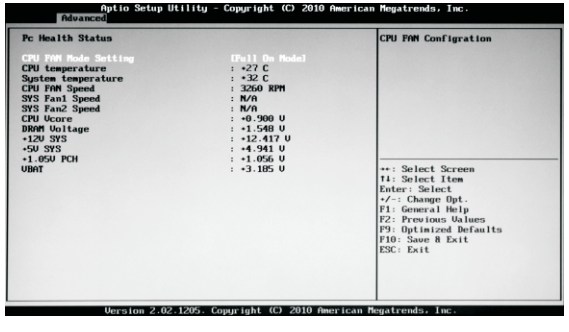

Aptio Setup Utility – Copyright (C) 2010 American Megatrends, Inc.
Advanced
Pc Health Status
CPU FAN Mode Setting [Full On Mode]
CPU temperature : +27 C
System temperature : +32 C
CPU FAN Speed : 3260 RPM
SYS Fan1 Speed : N/A
SYS Fan2 Speed : N/A
CPU Vcore : +0.900 V
DRAM Voltage : +1.548 V
+12V SYS : +12.417 V
+5V SYS : +4.941 V
+1.05V PCH : +1.056 V
VBAT : +3.185 V
CPU FAN Configration
↔: Select Screen
↑↓: Select Item
Enter: Select
+/-: Change Opt.
F1: General Help
F2: Previous Values
F9: Optimized Defaults
F10: Save & Exit
ESC: Exit
Version 2.02.1205. Copyright (C) 2010 American Megatrends, Inc.

Fig 3.7

- **H/W Health Function**

  Through this item, you can view the state of the system hardware. You can view the speed of the CPU fan, temperature of CPU and other values.

- **CPU Fan Speed Control**

  To set the CPU fan's mode. Options: [Auto][Full On Mode][PWM On Mode]

3.5 LAN Configuration

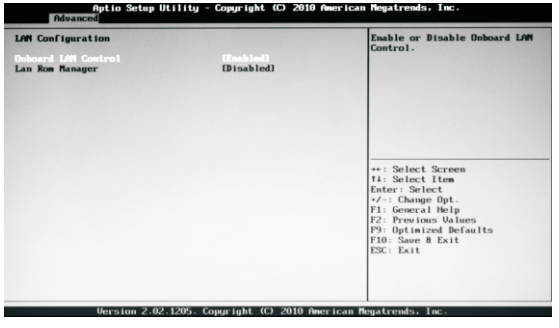


Fig 3.8

- **Onboard LAN control**

- **LAN ROM Manager**

4. Power

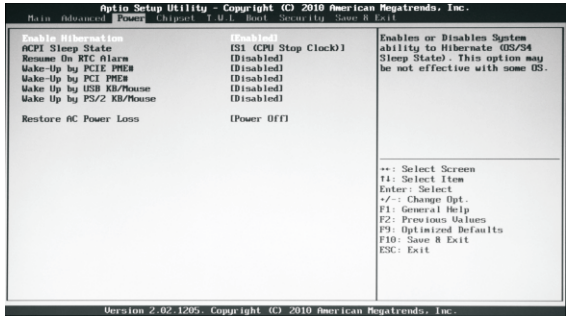

Aptio Setup Utility – Copyright (C) 2010 American Megatrends, Inc.
Main Advanced Power Chipset T.U.L. Boot Security Save & Exit
Enable Hibernation [Enabled]
ACPI Sleep State [S1 (CPU Stop Clock)]
Resume On RTC Alarm [Disabled]
Wake-Up by PCIE PME# [Disabled]
Wake-Up by PCI PME# [Disabled]
Wake Up by USB KB/Mouse [Disabled]
Wake Up by PS/2 KB/Mouse [Disabled]
Restore AC Power Loss [Power Off]
Enables or Disables System ability to Hibernate (OS/S4 Sleep State). This option may be not effective with some OS.
↔: Select Screen
↑↓: Select Item
Enter: Select
+/-: Change Opt.
F1: General Help
F2: Previous Values
F9: Optimized Defaults
F10: Save & Exit
ESC: Exit
Version 2.02.1205. Copyright (C) 2010 American Megatrends, Inc.

Fig 3.9

- **Enable Hibernation**

- **ACPI Sleep State**
  This item is use to set sleep mode. Options:[S1][S3]

- **Resume In RTC Alarm**
  Use this item to set RTC awaking time and methods.

- **Restore AC power loss**
  This item is used for setting what state the system should be in when the AC power is restored after power interruption. The options and their definitions are as follows:

PIN	Definition
Power Off:	To allow the system to be in shutoff state
Power On	To allow the system to be started automatically.
Last State	To allow the system to keep the pre-power off state.

5. Chipset

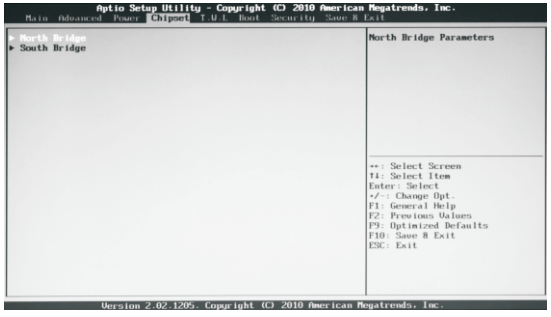

Aptio Setup Utility – Copyright (C) 2010 American Megatrends, Inc.
Main Advanced Power Chipset T.U.L. Boot Security Save & Exit
▶ North Bridge
▶ South Bridge
North Bridge Parameters
↔: Select Screen
↑↓: Select Item
Enter: Select
+/-: Change Opt.
F1: General Help
F2: Previous Values
F9: Optimized Defaults
F10: Save & Exit
ESC: Exit
Version 2.02.1205. Copyright (C) 2010 American Megatrends, Inc.

Fig 3.10

This item includes “North bridge” and “South bridge” configuration.

5.1 North Bridge configuration

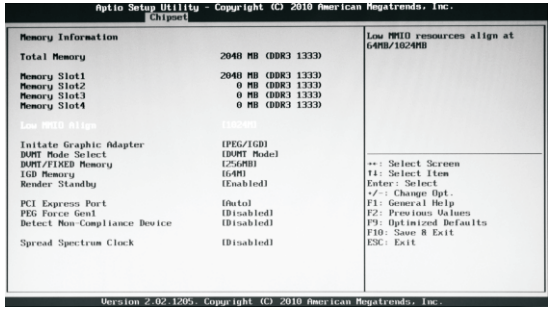

Aptio Setup Utility – Copyright (C) 2010 American Megatrends, Inc.
Chipset
Memory Information
Total Memory 2048 MB (DDR3 1333)
Memory Slot1 2048 MB (DDR3 1333)
Memory Slot2 0 MB (DDR3 1333)
Memory Slot3 0 MB (DDR3 1333)
Memory Slot4 0 MB (DDR3 1333)
Low MMIO Align [1024MB]
Initate Graphic Adapter [PEG/IGD]
DVMT Mode Select [DVMT Mode]
DVMT/FIXED Memory [256MB]
IGD Memory [64M]
Render Standby [Enabled]
PCI Express Port [Auto]
PEG Force Gen1 [Disabled]
Detect Non-Compliance Device [Disabled]
Spread Spectrum Clock [Disabled]
Low MMIO resources align at 64MB/1024MB
↔: Select Screen
↑↓: Select Item
Enter: Select
+/-: Change Opt.
F1: General Help
F2: Previous Values
F9: Optimized Defaults
F10: Save & Exit
ESC: Exit
Version 2.02.1205. Copyright (C) 2010 American Megatrends, Inc.

Fig 3.11

- **Total Memory**
  This item is use to set memory frequency.

- **Initiate Graphic Adapter**
  This item is use to set display controller. Default [PEG/IGD].

5.2 South Bridge configuration

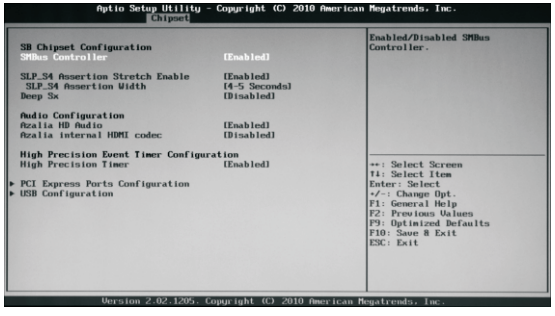


Fig 3.12

- **Azalia HD Audio**

- **Azalia Internal HDMI codec**
  Do enable this item when HDMI output is using.

6. T.W.L

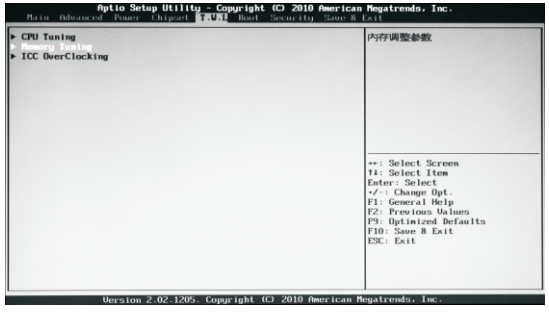


Fig 3.13

- **CPU Tuning**
- **Memory Tuning**

- **ICC OverClocking**
  This is an over clocking item, use to set CPU clock speed.

7. Boot

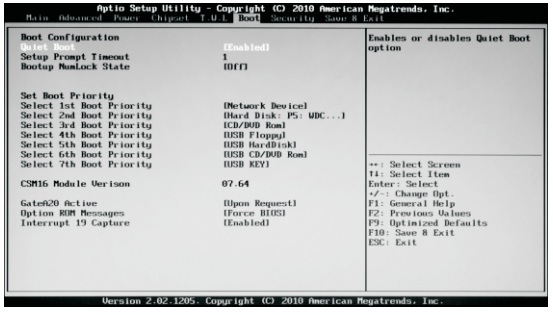

Aptio Setup Utility – Copyright (C) 2010 American Megatrends, Inc.
Main Advanced Power Chipset T.W.L Boot Security Save & Exit
Boot Configuration
Quiet Boot [Enabled]
Setup Prompt Timeout 1
Bootup NumLock State [Off]
Set Boot Priority
Select 1st Boot Priority [Network Device]
Select 2nd Boot Priority [Hard Disk: P5: WDC...]
Select 3rd Boot Priority [CD/DVD Rom]
Select 4th Boot Priority [USB Floppy]
Select 5th Boot Priority [USB HardDisk]
Select 6th Boot Priority [USB CD/DVD Rom]
Select 7th Boot Priority [USB KEY]
CSM16 Module Version 07.64
GateA20 Active [Upon Request]
Option ROM Messages [Force BIOS]
Interrupt 19 Capture [Enabled]
Enables or disables Quiet Boot option
↔: Select Screen
↑↓: Select Item
Enter: Select
+/-: Change Opt.
F1: General Help
F2: Previous Values
F9: Optimized Defaults
F10: Save & Exit
ESC: Exit
Version 2.02.1205. Copyright (C) 2010 American Megatrends, Inc.

Fig 3.14

- **Quick Boot**
  If this item is set as Enabled, the system can be started within five seconds and some detection items will be ignored. The options are [Disabled] and [Enabled].

- **Setup Prompt Timeout**
  This item is use to set wait time of entering the OS.

- **Bootup NumLock State**
  (To set the state of Num Lock after start-up). Options are OFF and ON. In other words, this item can be used for setting the state of Num Lock for the time the system has been started. It can be set on the basis of the needs of the user and doesn't affect the performance of the computer.

- **Set Boot Priority**
  To set the booting priority.

- **Interrupt 19 Capture**
  If you use some PCI extension cards with built-in firmware program (like SCSI extension card) and you want to start the system through Interrupt 19, you can set this item as [Enabled].
  Options: [Disabled] [Enabled].

8. Security Setup

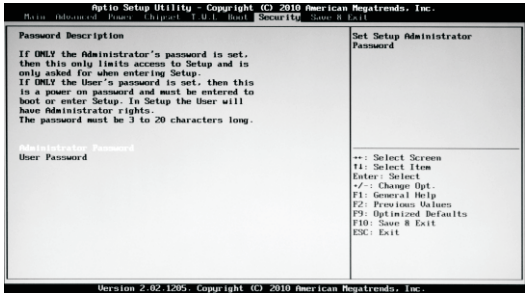

Aptio Setup Utility – Copyright (C) 2010 American Megatrends, Inc.
Main Advanced Power Chipset T.U.I. Boot Security Save & Exit
Password Description
If ONLY the Administrator's password is set, then this only limits access to Setup and is only asked for when entering Setup.
If ONLY the User's password is set, then this is a power on password and must be entered to boot or enter Setup. In Setup the User will have Administrator rights.
The password must be 3 to 20 characters long.
User Password
Set Setup Administrator Password
↔: Select Screen
↑↓: Select Item
Enter: Select
+/-: Change Opt.
F1: General Help
F2: Previous Values
F9: Optimized Defaults
F10: Save & Exit
ESC: Exit
Version 2.02.1205. Copyright (C) 2010 American Megatrends, Inc.

Fig 3.15

If this function is selected, the following information will appear:

Enter New Password hhhhhh

Then, enter the password with not more than eight characters and press <Enter>. BIOS will requires to enter the password again. Once you enter it again, BIOS will save the set password.

Once the password item is enabled, you will be required to enter the password each time before the system goes to the set program of BIOS. The user can set this item through the Security Option in advanced BIOS properties. If the item Security Option is set as System, the password will be required to be entered before the system guides and goes to the set program of BIOS. If set as Setup, the password will be required to be entered only before the system goes to the set program of BIOS.

To delete the password, press <Enter> in the popped-up window that requires to enter the password. Then, information for confirmation will appear on the screen to allow you decide whether the password is disabled. Once the password is disabled, you won't have to enter the password and can enter the setup program directly when the system is restarted.

Boot Sector Virus Protection

This item is used for setting the alarm function in the case of virus attack in IDE disk sector. If this item is set as Enable and some program wants to write information in the sector, BIOS will display alarm information on the screen and buzz.

9. Save & Exit

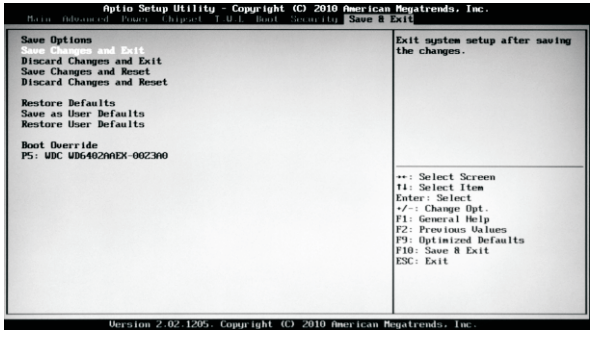

Aptio Setup Utility – Copyright (C) 2010 American Megatrends, Inc.
Main Advanced Power Chipset T.U.I. Boot Security Save & Exit
Save Options
Save Changes and Exit
Discard Changes and Exit
Save Changes and Reset
Discard Changes and Reset
Restore Defaults
Save as User Defaults
Restore User Defaults
Boot Override
P5: WDC WD6402AAEX-0023A0
Exit system setup after saving the changes.
↔: Select Screen
↑↓: Select Item
Enter: Select
+/-: Change Opt.
F1: General Help
F2: Previous Values
F9: Optimized Defaults
F10: Save & Exit
ESC: Exit
Version 2.02.1205. Copyright (C) 2010 American Megatrends, Inc.

Fig 3.16

- **Save Changes and Exit**

  Discard changes and exit

  Save changes and exit

  Discard changes and reset

- **Restore defaults**

  Save as user defaults

  Restore as user defaults

IV. Software installation

1. Install driver for motherboard

After you complete the installation of the operating system, you should then install the driver for the motherboard. To this end, put the disk into the CD-ROM. The interface as shown in Fig. 4.1 will appear.

Fig. 4.1

In Fig 4.1, click "Driver ", another UI appears as shown in Fig 4.2.

Fig. 4.2

1.1. Installing driver for Chipset

After you click “Install” behind the “Intel Chipset driver” in the interface of Fig. 4.2, a dialog box as shown in Fig. 4.3 will pop up. Then you can click Next and wait till the driver is installed completely.

Intel® Chipset Device Software
Intel® Chipset Device Software
intel
Welcome to the Setup Program
This setup program will install the Intel® Chipset Device Software onto this computer. It is strongly recommended that you exit all programs before continuing.
< Back
Next >
Cancel
Intel® Installation Framework

Fig. 4.3

1.2 Install Sound card driver

After you click “Install” behind the “Realtek HD audio driver” in the interface of Fig. 4.2, a dialog box as shown in Fig. 4.4 will pop up. Then you can click “Next” and wait till the driver is installed completely.

Realtek High Definition Audio Driver Setup (2.85) R2.35
Welcome to the InstallShield Wizard for Realtek High Definition Audio Driver
The InstallShield Wizard will install Realtek High Definition Audio Driver on your computer. To continue, click Next.
InstallShield
< Back
Next >
Cancel

Fig. 4.4

1.3 Installing driver for on-board LAN chip

After you click “Install” behind the “Realtek 10/100/1000 LAN Driver” in the interface of Fig. 4.2, a dialog box as shown in Fig. 4.5 will pop up. Then you can click “Next” and wait till the driver is installed completely.

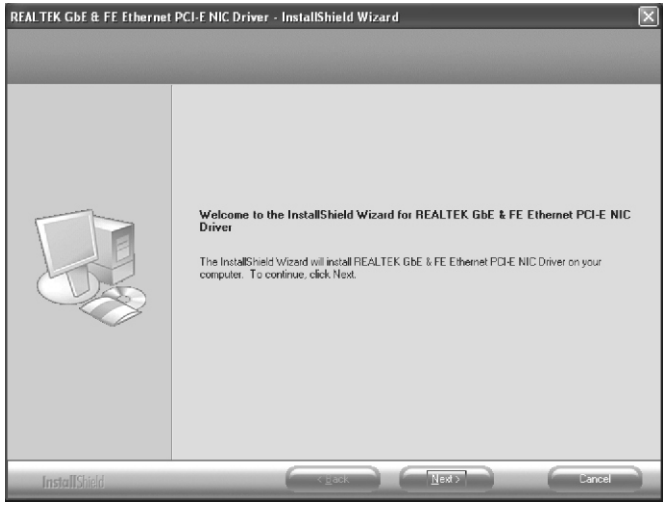

REALTEK GbE & FE Ethernet PCI-E NIC Driver - InstallShield Wizard
Welcome to the InstallShield Wizard for REALTEK GbE & FE Ethernet PCI-E NIC Driver
The InstallShield Wizard will install REALTEK GbE & FE Ethernet PCI-E NIC Driver on your computer. To continue, click Next.
InstallShield
< Back
Next >
Cancel

Fig. 4.5

1.4 Installing driver for graphic card

To install the driver for graphic card, you can click “Install” behind “XXX VGA Driver” in the interface of Fig. 4.2, complete the installation by following the indications in the popped-up dialog boxes, and then restart the computer.

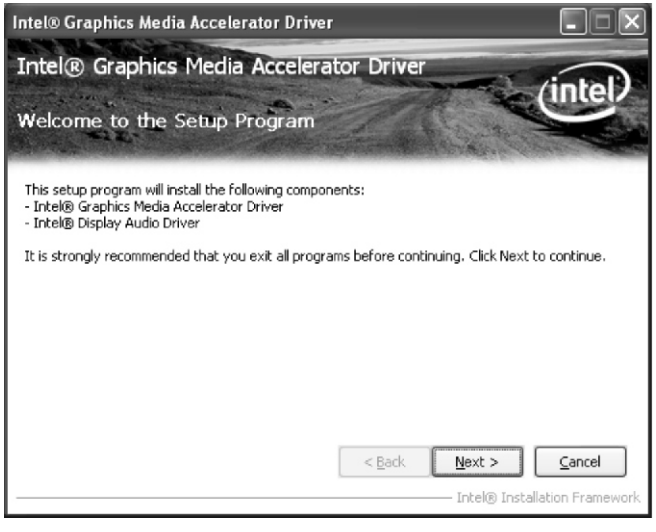

Intel® Graphics Media Accelerator Driver
Intel® Graphics Media Accelerator Driver
Welcome to the Setup Program
intel
This setup program will install the following components:
- Intel® Graphics Media Accelerator Driver
- Intel® Display Audio Driver
It is strongly recommended that you exit all programs before continuing. Click Next to continue.
< Back
Next >
Cancel
Intel® Installation Framework

Fig. 4.6

2. HD-AUDIO sound card setup

- **For Windows XP SP3:**

The control panel of the audio adapter will appear after the driver is installed, as shown in Fig. 4.7.

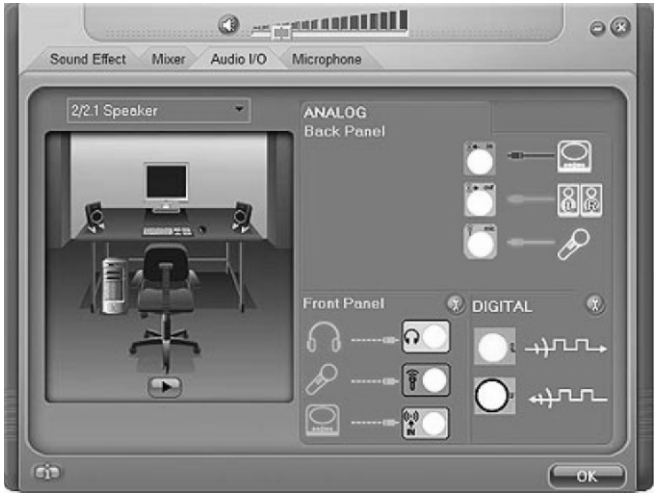


Fig. 4.7

After the initial installation of the driver, the default state of microphone is mute. You need to turn it on manually, as shown in Fig. 4.8 and 4.9.

Fig. 4.8

Fig. 4.9

- **For Windows Vista:**

After the driver for the audio adapter is stalled, you can click the Audio Manager at the lower right corner. The initial interface will pop up, as shown in Fig. 4.10 and 4.11.

Fig. 4.10

Fig. 4.11

Click the right upper part of the control interface—Advanced Setup for Device, the interface shown in Fig. 4.12 will pop up. Then select “separate all input jacks as independent input devices”.

Device advanced settings
Recording Device
Tie up same type of input jacks, i.e. line-in or microphone, as an input device.
Separate all input jacks as independent input devices.
OK
Cancel

Fig. 4.12

Click OK, and the controlling interface will turn to one shown in Fig. 4.13.

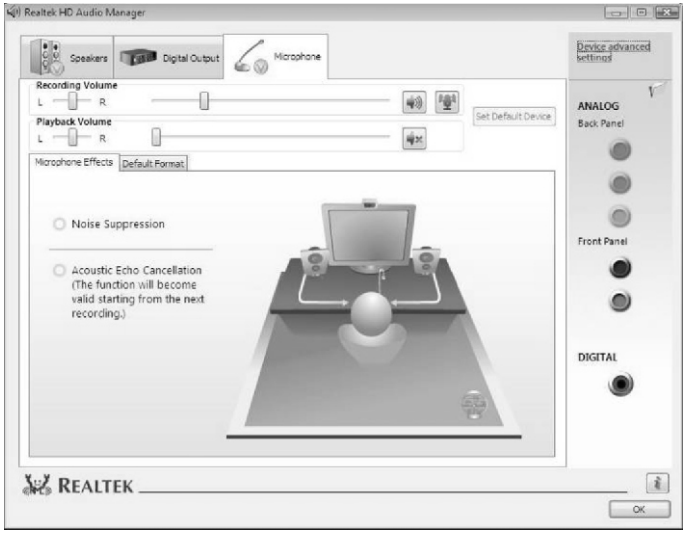


Fig. 4.13

If a MIC is used, please select the corresponding front or rear mode and set the device as default. In the above interface, you can adjust the volume for recording and the playing volume for the MIC.

If you need to set the output of multi-channel, you should right click the mouse at the corresponding output interface. A dialog box will pop up, as shown in Fig. 4.14.

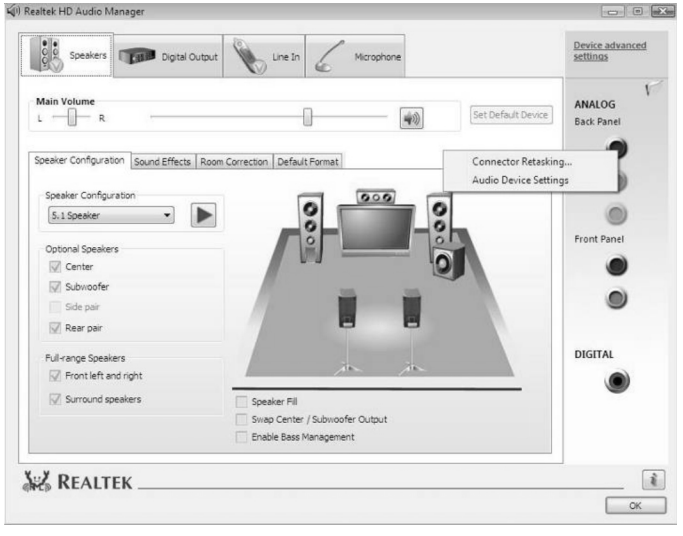


Fig. 4.14

Select Redistribution of Connectors. Then an interface will pop up, as shown in Fig. 4.15. After that, set the corresponding output.

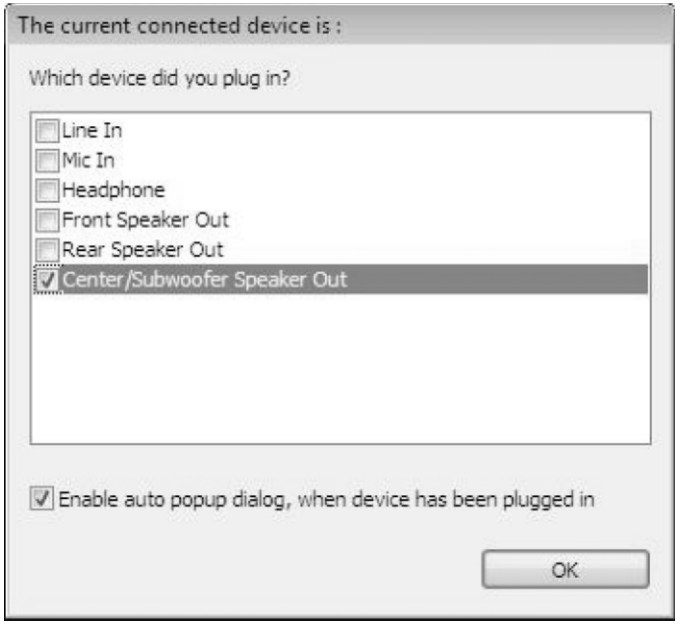


Fig. 4.15

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment

NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

This equipment complies with FCC RF radiation exposure limits set forth for an uncontrolled environment. This device and its antenna must not be co-located or operating in conjunction with any other antenna or transmitter.

"To comply with FCC RF exposure compliance requirements. The antennas used for this transmitter must be installed to provide a separation distance of at least 20 cm from all persons and must not be co-located or operating in conjunction with any other antenna or transmitter."